

NOKIA 930C



With Plug & Play[™]
19" (18" Viewable Diagonal)

Color Monitor

User Guide

Guide de l'utilisateur

Bedienungsanleitung

(International Spanish)

(Italian)

(Brazilian Portuguese)

(Swedish)

(Russian)

(Polish)

(Arabic)

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For Your Records

Product Name:	Nokia 930C
Model Number:	VCDTS21682-2
Document Number:	930C_UG_77
Serial Number:	_____
Purchase Date:	_____

Product disposal at end of product life

Please help preserve our environment. Please dispose of this product properly at the end of its useful life. Your local waste disposal company may provide information about proper disposal.

Getting Started

Congratulations on your purchase of a Nokia 930C color monitor. ***Important!*** *Save the original box and all packing material for future shipping needs.*

NOTE: The word “Windows” in this user guide refers to the following Microsoft operating systems: Windows ‘95, Windows ‘98, Windows 2000, Windows NT.

NOTE: This product was designed for operation in the magnetic fields of the hemisphere where it was purchased.

Package Contents

Your 930C package includes:

- 930C monitor
- DB-15 video cable
- Power cord
- User Guide
- INF and ICM installation files on diskette or CD-ROM

NOTE: The supplied INF file ensures compatibility with Windows operating systems, and the ICM file (Image Color Matching) ensures accurate on-screen colors. We recommend that you install both files.

Precautions

-
- | | |
|---|---|
| <ul style="list-style-type: none">• For best viewing conditions sit at least 18” from the monitor.• AVOID TOUCHING THE SCREEN WITH YOUR FINGERS. Oils from the skin are difficult to remove.• NEVER REMOVE THE REAR COVER. The monitor contains high-voltage parts. You may suffer serious injury if you touch these parts.• Avoid exposing the monitor to direct sunlight or another heat source. The monitor should be facing away from direct sunlight to reduce glare.• Do not place your monitor near a source of water or moisture. | <ul style="list-style-type: none">• Place your monitor in a well ventilated area. Do not place anything on the monitor that blocks the ventilation slots or prevents adequate dissipation of heat.• Do not place heavy objects on the monitor, video cable, or power cord.• If smoke, abnormal noise, or strange odor is present, immediately switch the monitor off and call your. It is dangerous to operate your monitor under these conditions.• Keep the monitor away from magnets, motors, transformers and televisions. |
|---|---|
-

Quick Installation

1 Connect video cable(s)

Make sure both the monitor and computer are powered OFF.

The monitor can be connected to one or two computers using either the DB-15 video cable (included) or a BNC video cable (purchased separately). To toggle between two computers: connect the DB-15 video cable to the monitor and first computer, and then connect the BNC video cable to the monitor and the second computer.

Macintosh users: Models older than G3 require a Macintosh adapter. Attach the adapter to the computer and plug the video cable into the adapter.

To order a Macintosh adapter, contact your dealer. See *Customer Support* in this user guide.

2 Connect power cord

Connect the power cord from the monitor to a properly grounded AC outlet.

3 Power-ON monitor and computer

Power-ON the monitor, then power-ON the computer. This sequence (monitor before computer) is very important.

NOTE: At this point Windows 98 users may receive a message asking them to install the 930C INF file.

4 Install INF and ICM files

For CD-ROM: Insert the CD-ROM into the CD-ROM drive, select "Monitor Drivers," and follow the on-screen instructions.

For diskette: Insert your diskette into the diskette drive and run **install.exe**. Follow the on-screen instructions.

5 Windows users: Set the Timing

Mode (resolution and refresh rate)

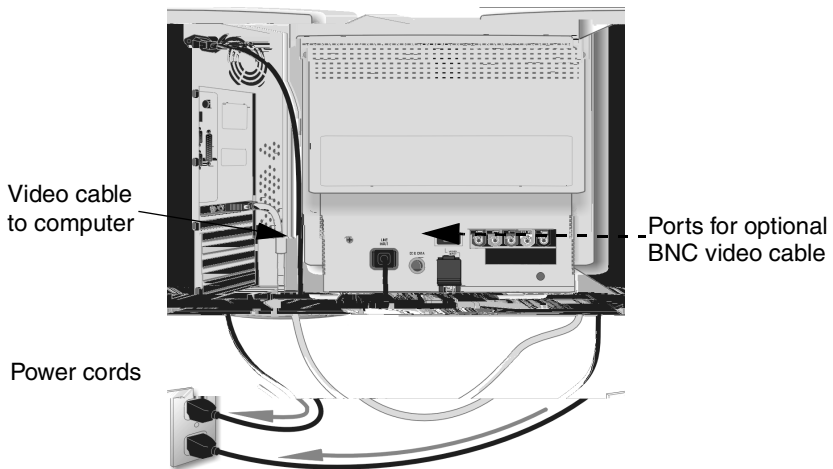
Example: 1600 X 1200 @ 85 Hz.

For instructions on changing the resolution and refresh rate, see the user guide for your computer's graphics card.

Installation is complete. Enjoy your new 930C monitor!

To be best prepared for any future customer service needs:

Write the serial number (see back of the monitor) in "For your Records" on page 1 of this guide.



Using the Monitor

Setting the Timing Mode

Setting the timing mode is important for maximizing the quality of the screen image and minimizing eye strain. The **timing mode** consists of the **resolution** (example 1280 x 1024) and **refresh rate** (or vertical frequency; example 75 Hz). After setting the timing mode, use the on-screen controls to adjust the screen image.

The recommended timing modes for this monitor are:

VESA 1280 x 1024 @ 85 Hz.

To set the Timing Mode:

- 1 **Set the resolution:** Right-click on the Windows® desktop > **Properties** > **Settings** > Desktop Area (Screen Area for Windows 95 and newer) > set the resolution.
- 2 **Set the refresh rate:** See your graphic card's user guide for instructions.

NOTE: To minimize the adjustments required for an optimal screen **image**, select a timing mode from the **Preset Timing Modes** table below.

Preset Timing Modes

VGA 640 x 400 @ 70 Hz	VESA 1280 x 1024 @ 85 Hz
VESA 800 x 600 @ 75 Hz	VESA 1600 x 1200 @ 75 Hz
VESA 800 x 600 @ 85 Hz	VESA 1600 x 1200 @ 85 Hz
VESA 1024 x 768 @ 75 Hz	VESA 1920 x 1440 @ 75 Hz
VESA 1024 x 768 @ 85 Hz	Macintosh 1024 x 768 @ 75 Hz
VESA 1280 x 1024 @ 75 Hz	Macintosh 1152 x 870 @ 75 Hz

WARNING: Do NOT set the graphics card in your computer to exceed the maximum refresh rate; doing so may result in permanent damage to your monitor.

Timing Modes with Maximum Refresh Rates

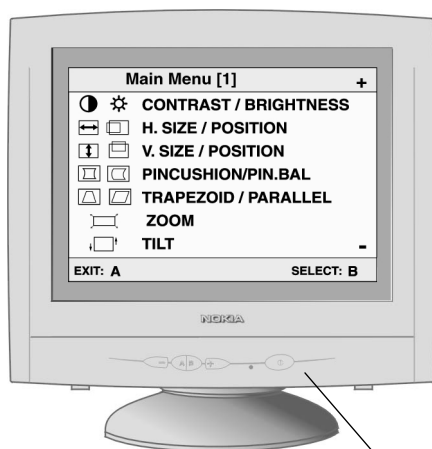
1920 x 1440 NI @ 77 Hz	1152 x 864 NI @ 125 Hz
1856 x 1392 NI @ 80 Hz	1024 x 768 NI @ 140 Hz
1792 x 1344 NI @ 83 Hz	800 x 600 NI @ 175 Hz
1600 x 1200 NI @ 92 Hz	640 x 480 NI @ 180 Hz
1280 x 1024 NI @ 107 Hz	

(NI = Non Interlaced)

Adjusting the Screen Image

Beginning with the Main Menu shown below, use the buttons on the front control panel to adjust the on-screen controls which display on the screen. The on-screen controls are explained in the four steps at the top of the next page and are further explained on pages 8-10.

IMPORTANT: The monitor should be warmed up for 30 minutes prior to making any adjustments.



Main Menu with on-screen Controls

Use the Front Control Panel to adjust the on-screen Controls

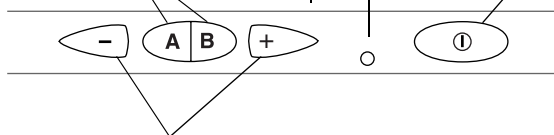
Front Control Panel

“A” Display Main Menu; also saves changes and exits the menu.

“B” Displays control screens after a selection is made. Also, toggles between controls displayed in pairs.

Power Light

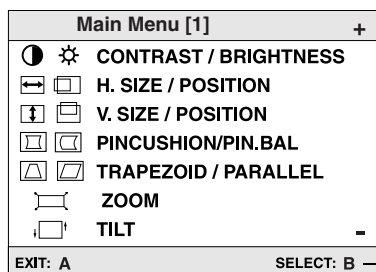
Power On/Off



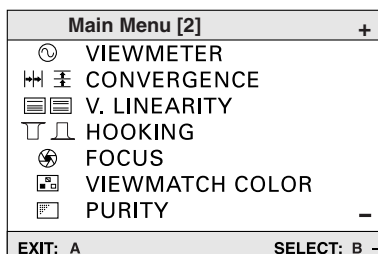
Scroll through menu options; also increases or decreases the value of a control.

To adjust the screen image:

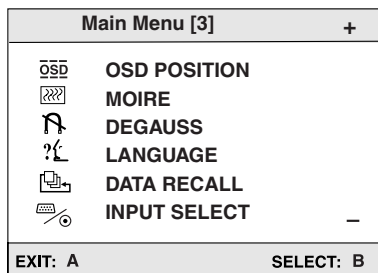
- 1 To display the Main Menu (parts 1-3 shown below), press button [A].



With Main Menu [1] displayed
press button B to display
Main Menu [2].



With Main Menu [2] displayed
press button B to display
Main Menu [3].















- 2 To select a control you want to adjust, press the buttons on the front control panel of your monitor (+ or -) and scroll through the choices.
When the control you want to adjust is highlighted, press button B.

NOTE: Some controls on the Main Menu are listed in pairs, such as Contrast/Brightness. Press button B to toggle between control pairs after displaying a control screen.

- 3 To adjust the selected control, press the buttons (+ or -).
- 4 To save the control setting and Exit the menu, press button A *twice*.

Main Menu Controls

The menu items shown below can be adjusted by using the buttons (+ or –) on the front of your monitor.

Control	Explanation
	Contrast adjusts the difference between the image background (black level) and the foreground (white level). <i>Shortcut:</i> Before displaying the Main Menu, press + or – to display the Contrast/Brightness control screen.
	Brightness adjusts the background black level of the screen image.
	Horizontal Size adjusts the width of the screen image.
	Horizontal Position moves the screen image left or right.
	Vertical Size adjusts the height of the screen image.
	Vertical Position moves the screen image up or down.
	Pincushion straightens curves along the vertical edges of the screen image that bow inward or outward.
	Pin Balance straightens curves along the vertical edges of the screen image that bow in the same direction.
	Trapezoid adjusts the top and bottom of the screen image until they have equal length.
	Parallel slants the vertical edges of the screen image until they are parallel.
	Zoom expands and contracts the entire screen image.
	Tilt rotates the entire screen image.

Control	Explanation (Continued)
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ViewMeter® displays information about the video signal coming from your computer's graphics card. This includes the **refresh rate** (or Vertical Frequency) and the **scan rate** (or Horizontal Frequency).



H. Convergence (Horizontal Convergence) adjusts vertical color alignment. Use this control when red or blue borders are present around the vertical segments of black letters on a white background.



V. Convergence (Vertical Convergence) adjusts horizontal color alignment. Use this control when red or blue borders are present around the horizontal segments of black letters on a white background.



V. Linear (Vertical Linearity Center) adjusts the vertical distortion at the center of the screen image.

NOTE: Vertical Linearity Center is an advanced control and should be used for setup and calibration only.



V. Linear Sym (Vertical Linearity Symmetry) minimizes the distortion (squeezing or stretching) images between the top and bottom of the screen image.

NOTE: Vertical Linearity Symmetry is an advanced control and should be used for setup and calibration only.



Top Hooking straightens the top corners of the screen image.



Bottom Hooking straightens the bottom corners of the screen image.



Focus adjusts the sharpness of the screen image.



ViewMatch® Color provides several color options: three preset color temperatures and User Color, which allows you to adjust red (R), green (G), and blue (B). The factory setting for this product is 9300K (9300 Kelvin).

9300K — Adds blue to the screen image for cooler white (often used in office settings with fluorescent lighting).

6500K — Adds red to the screen image for warmer white and richer red.

5000K — Adds blue and green to the screen image.

User Color — Individual adjustments for red, green, and blue.

Control

Explanation (Continued)



Purity adjusts the uneven color of the overall image. For example, if one area of a color appears darker than another area, first use the degauss feature. If color is still uneven, use the purity control.

Top Left adjusts uneven color at top left corner of screen.

Top Right adjusts uneven color at top right corner of screen.

Bottom Left adjusts uneven color at bottom left corner of screen.

Bottom Right adjusts uneven color at bottom right corner of screen.



OSD Position allows you to designate the Time, Position, Color, and Appearance of the on-screen menus and control screens.



Moire reduces interference patterns that appear as ripples, waves, or unwanted background color textures. Interference patterns of this type are most noticeable when viewing images having closely spaced lines or finely detailed patterns.



Degauss removes the build-up of magnetic fields that can cause irregular colors to appear around the edges of screen images. Your monitor will degauss **automatically** each time you power it on.

To degauss your monitor **manually**, select Degauss on the on-screen menu and press button [2].

Important: *Do not degauss repeatedly. Doing so can be harmful to the monitor.* Wait at least 20 minutes before using this control again.



Language allows you to choose from among several languages for the menus and control screens: English, French, German, Italian, and Spanish.



Data Recall returns adjustments to the original factory settings if the product is operating in a Preset Timing Mode.

Exception: This control does not affect changes made with the **User Color** control.



Input Select allows you to toggle between two video-signal sources (D-Sub and BNC).

Other Information

Specifications

CRT	Type	19" (18.0" viewable diagonal area), 0.25 mm ~ 0.27 mm variable aperture grill pitch, 90° deflection
	Phosphor	RGB, medium-short persistence
	Glass surface	Anti-reflection, anti-static coating Standard light transmission rate = 40%
Input Signal	Video Sync	RGB Analog (0.7 Vp-p, 75 Ohms f _H : 30-117 kHz, f _v : 50-180 Hz HV Separate (TTL), Composite, Sync on Green
Compatibility	PC Macintosh ¹	VGA up to 1920 x 1440 Power Macintosh (may require Macintosh adapter)
Timing Modes with Maximum Refresh Rates ²		1920 x 1440 NI @ 77 Hz 1152 x 864 NI @ 125 Hz 1856 x 1392 NI @ 80 Hz 1024 x 768 NI @ 140 Hz 1792 x 1344 NI @ 83 Hz 800 x 600 NI @ 175 Hz 1600 x 1200 NI @ 92 Hz 640 x 480 NI @ 180 Hz 1280 x 1024 NI @ 107 Hz
Power	Voltage	AC 100-240V (auto switch) 50/60 Hz
Display Area	Default Full scan	353 mm (H) x 265 mm (V) (Typical) 364 mm (H) x 275 mm (V) (Depends on signal timing)
Operating Conditions	Temperature Humidity Altitude	32° F to 104° F (0° C to +40° C) 5% to 95% (no condensation) To 10,000 feet
Storage Conditions	Temperature Humidity Altitude	-40° F to +140° F (-40° C to +60° C) 5% to 95% (no condensation) To 40,000 feet
Dimensions	Physical (monitor)	470 mm (W) x 470 mm (H) x 477 mm (D) 18.5" (W) x 18.5" (H) x 18.8" (D)
Weight	Net	25.0 kg (55.0 lb.) (monitor only)
Regulations		UL, DHHS, FCC-B, CE, CB, CSA, ISO 9241-3, ICES003, Nemko, Semko, Demko, Fimko, NOM, IRAM, TUV/GS, VCCI, BSMI, PSB, C-Tick, TUV-Ergo, S. Africa, PCBC, GOST, SASO, CCIB, CCEE, EMC, EMI-B, TCO 99
Power Saving Modes	On DPMS™ Standby DPMS Suspend DPMS Off	< 130W NORMAL (Green LED) < 15W (Orange LED) < 15W (Orange LED) < 3W (Orange LED)

Preset Timing Modes

(The pre-adjusted and recommended Timing Mode for this monitor is:

VESA 1280 x 1024 @ 85 Hz.)

VGA 640 x 400 @ 70 Hz	VESA 1280 x 1024 @ 85 Hz
VESA 800 x 600 @ 75 Hz	VESA 1600 x 1200 @ 75 Hz
VESA 800 x 600 @ 85 Hz	VESA 1600 x 1200 @ 85 Hz
VESA 1024 x 768 @ 75 Hz	VESA 1920 x 1440 @ 75 Hz
VESA 1024 x 768 @ 85 Hz	Macintosh 1024 x 768 @ 75 Hz
VESA 1280 x 1024 @ 75 Hz	Macintosh 1152 x 870 @ 75 Hz

¹ Macintosh models prior to G3 require a Macintosh adapter. To order a Macintosh adapter, contact your dealer. You will need to provide serial number of the product.

² Warning: Do NOT set the graphics card in your computer to exceed these Maximum Refresh Rates; doing so could result in permanent damage to the monitor.

Troubleshooting

No power

- Make sure power button (or switch) is ON.
- Make sure A/C power cord is securely connected to the back of the monitor and to a power outlet.
- Plug another electrical device (like a radio) into the power outlet to verify that the outlet is supplying proper voltage.

Power on but no screen image

- Make sure the video cable supplied with the monitor is tightly secured to the video output port on the back of the computer. If the other end of the video cable is not attached permanently to the monitor, tightly secure it to the monitor.
- Adjust brightness and contrast.
- Verify whether an adapter is required for proper signal continuity between graphics card and monitor.

Flickering

- Not enough power supplied. Connect the monitor to a different outlet. If using a surge protector, reduce the number of devices plugged in.
- Check the ViewMeter® from the main menu to verify the refresh rate (vertical frequency) is 75 Hz or higher.
- Remove any devices from the area around the monitor that emit magnetic fields such as radios, surge protectors, unshielded speakers, fluorescent lights, AC power converters, desk fans, etc.
- Make sure the graphics card in your computer can use non-interlaced mode at the desired frequencies. To enable your graphics card to support higher refresh rates, try selecting fewer colors or running lower resolutions.

Wrong or abnormal colors

- If any colors (red, green, or blue) are missing, check the video cable to make sure it is securely connected. Loose or broken pins in the cable connector could cause an improper connection.
- Connect the monitor to another computer.
- Select Degauss from the Main Menu. Do this only once.
- If you have an older graphics card, contact your dealer.

Entire screen image (rolls) vertically

- Make sure video input signals are within the monitor's specified frequency range.
- Try the monitor with another power source, graphics card, or computer system.
- Connect the video cable securely.

Control buttons do not work

- Press only one button at a time.

Customer Support

For the most expedient answer to your question, do the following:

- 1 Check Troubleshooting (on the previous page).
- 2 For assistance contact your reseller.
- 3 For further assistance see the contact information listed below.

Ask your reseller to refer you to a service center if contact information for your country or region is not listed below:

NOTE: You need to provide the serial number (on the back of the product).

Country/Region	T = Telephone F = FAX
United States	T: (800) 688-6688 F: (909) 468-1202
Canada	T: (800) 688-6688 F: (909) 468-1202
United Kingdom	T: 0800 833 648 F: 0044 (0)1293 643910
Europe, Middle East, Baltic countries, and North Africa	T: 0044 (0)1293 643900 F: 0044 (0)1293 643910
Australia	(contact reseller)
New Zealand	T: 64-3-366-1135 F: 64-3-366-7006
Singapore/Southeast Asia	T: 65-273-4018 F: 65-273-1566
Other Asia/Pacific countries and Indian Peninsula	T: 886-2-2248-4072 F: 886-2-2240-8238
South Africa	T: 27-11-314-0002 F: 27-11-314-0002

Cleaning the Monitor

- MAKE SURE THE MONITOR IS TURNED OFF.
- NEVER SPRAY OR POUR ANY LIQUID DIRECTLY ONTO THE SCREEN OR CASE.

To clean the screen:

- 1 Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
- 2 If still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.

To clean the case:

- 1 Use a soft, dry cloth.
- 2 If still not clean, apply a small amount of a non-ammonia, non-alcohol based, mild non-abrasive detergent onto a clean, soft, lint-free cloth, then wipe the surface.

DISCLAIMER

Do not use ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. Your warranty does not cover damage resulting from use of any ammonia or alcohol-based cleaners.

Appendix

Safety Guidelines

CAUTION: The socket-outlet shall be installed near the equipment and shall be easily accessible.

CAUTION: Use a power cable that is properly grounded. Always use the appropriate AC cord that is certified for the individual country. Some examples are listed below:

USA.....UL	SwitzerlandSEV
Canada.....CSA	BritainBASE/BS
Germany.....VDE	JapanElectric Appliance Control Act

IMPORTANT NOTICE CONCERNING POWER CORD SELECTION

The power cord set for this unit has been enclosed and has been selected according to the country of destination and must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set, or if the cord set is not enclosed.

The female receptacle of the cord set must meet IEC-60320 requirements and will look like (Figure A1 below):



For the United States and Canada

In the United States and Canada the male plug is a NEMA5-15 style (Figure A2), UL Listed, and CSA Labeled. For units which are mounted on a desk or table, type SVT or SJT cord sets may be used. For units which sit on the floor, only SJT type cord sets may be used. The cord set must be selected according to the current rating for your unit. Please consult the table below for the selection criteria for power cords used in the United States and Canada.



Cord Type	Size of Conductors in Cord	Maximum Current Rating of Unit
SJT	18 AWG	10 Amps
	16 AWG	12 Amps
	14 AWG	12 Amps
SVT	18 AWG	10 Amps
	17 AWG	12 Amps

For European Countries

In Europe you must use a cord set which is appropriate for the receptacles in your country. The cord set is HAR-Certified, and a special mark that will appear on the outer sheath, or on the insulation of one of the inner conductors.

AC PLUG CORD PRECAUTIONS FOR THE UNITED KINGDOM

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET THEN THE PLUG SHOULD BE CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO AN APPROPRIATE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

WARNING: THIS APPLIANCE MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

- Green-and-Yellow: Earth
- Blue: Neutral
- Brown: Live

If the coloured wires of the mains lead of this appliance do not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the Earth symbol or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

If you have any questions concerning which proper power cord to use, please consult with the dealer from whom you have purchased the product.

Compliance Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning

To assure continued FCC compliance, the user must use grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. If a BNC cable is going to be used, use only a shielded BNC(5) cable. Also, any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

Notice for Japan

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

CE Conformity



The device complies with the requirements of the EEC directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC Art.5 with regard to "Electromagnetic compatibility," and 73/23/EEC as amended by 93/68/EEC Art.13 with regard to "Safety."

